

5.0 RECLAMATION

5.1 DRILL SITES

Resolution would notify the Forest Service prior to the commencement of reclamation activities. Following the completion of all drilling, solids and desiccated drilling muds in the mud pits would be excavated and removed from the site. These inert materials would be disposed of in accordance with applicable state and federal regulations. The drill sites and mud pits would then be returned to natural grade with a track hoe using rocks and soil set aside during site construction and mud pit excavation. Each drill site would be mulched and seeded in accordance with Forest Service guidance using approved seed mixes of native species.

5.2 ROADS

Table 10 identifies the current Forest Service Road Maintenance Level for each segment of access roadway and describes the proposed reclamation and the post pre-feasibility study condition of the roadways based on the Forest Service Travel Management Guidelines for Road Maintenance Levels.¹

As determined by the Forest Officer, the sections of the existing access roads, if they require improvement, would generally be reclaimed by ripping/roughing and seeding with an appropriate seed mix and placement of rocks or other protective materials. All new access roads would be reclaimed and closed through the placement of earthen berm. Areas of re-seeding would be scarified (ripped) prior to seeding to break-up compaction. Road surfacing material, if any, may need to be removed as determined by the Forest Officer. Stormwater BMPs, such as water bars, culverts, and erosion control features, would be repaired or removed as necessary and as specified by the Forest Officer.

¹ USDA Forest Service. 2005. Guidelines for Road Maintenance Levels. USDA Forest Service Technology and Development Program. December 2005.

Table 10. Road Reclamation and Post Pre-feasibility Study Management Designation

Road	Current Forest Service Road Maintenance Level	Post Pre-feasibility Study Forest Service Road Maintenance Level and Reclamation Activities
FR 315	Level 4 – Moderate Degree of User Comfort	The road will retain its current FS designation subject to FS maintenance and repair activities. No reclamation or restoration is proposed for the roadway travel area.
FR 320	Level 2 – High Clearance Vehicles	The road will retain its current FS designation subject to FS maintenance and repair activities. No reclamation or restoration is proposed for the roadway travel area.
FR 898	Level 2 – High Clearance Vehicles	The road will retain its current FS designation subject to FS maintenance and repair activities. No reclamation or restoration is proposed for the roadway travel area.
Existing Road from FR 898 to APV-8	User Created	Level 1 closure will be accomplished by placing an earthen berm at the start of this user created road’s intersection with FR 898 when the roadway is no longer required for access to pre-feasibility study activities.
FR 2261	Level 2 – High Clearance Vehicles	The road will retain its current FS designation subject to FS maintenance and repair activities. No reclamation or restoration is proposed for the roadway travel area.
FR 2440	Level 1 – Basic Custodial Care	Level 1 closure will be accomplished by placing an earthen berm at the start of FR 2440 when the roadway is no longer required for access to pre-feasibility study activities.
FR 2461	Level 2 – High Clearance Vehicles	The road will retain its current FS designation subject to FS maintenance and repair activities. No reclamation or restoration is proposed for the roadway travel area.
Existing Extension of 2461	User Created	Level 1 closure of this extension of FR 2461 will be accomplished by construction of an earthen berm at the start of the user created roadway when the roadway is no longer required for access to pre-feasibility study activities.
FR 2463	Level 1 – Basic Custodial Care	The road will retain its current FS designation. Level 1 closure will be accomplished by placing an earthen berm at the start of FR 2463 when the roadway is no longer required for access to pre-feasibility study activities.
FR 2466 (and small portion of FR 2467)	Level 2 – High Clearance Vehicles	The road will retain its current FS designation subject to FS maintenance and repair activities. No reclamation or restoration is proposed for the roadway travel area.
FR 2469	Level 1 – Basic Custodial Care	The road will retain its current FS designation. Level 1 closure will be accomplished by placing an earthen berm at the start of FR 2469 when the roadway is no longer required for access to pre-feasibility study activities.
FR 2505	Level 1 – Basic Custodial Care	The road will retain its current FS designation. Level 1 closure will be accomplished by placing an earthen berm at the start of FR 2505 when the roadway is no longer required for access to pre-feasibility study activities.
FR 2511	Level 1 – Basic Custodial Care	The road will retain its current FS designation. Level 1 closure will be accomplished by placing an earthen berm at the start of FR 2511 when the roadway is no longer required for access to pre-feasibility study activities.
FR 3139	Level 1 – Basic Custodial Care	The road will retain its current FS designation. Level 1 closure will be accomplished by placing an earthen berm at the start of FR 3139 when the roadway is no longer required for access to pre-feasibility study activities.
FR 3786	Level 1 – Basic Custodial Care	The road will retain its current FS designation. Level 1 closure will be accomplished by placing an earthen berm at the start of FR 3786 when the roadway is no longer required for access to pre-feasibility study activities.
Existing Road from FR 315 to H-E	User Created	Level 1 closure will be accomplished by placing an earthen berm at the start of this user created road’s intersection with FR 315 when the roadway is no longer required for access to pre-feasibility study activities.
Existing Road from FR 2440 to QC-04	User Created	Level 1 closure will be accomplished by placing an earthen berm at the start of this user created roads intersection with FR 2440 when the roadway is no longer required for access to pre-feasibility study activities.

5.3 DRILL HOLES

Drilling and drill hole abandonment would be conducted in accordance with Arizona Administrative Code (AAC) R12-15, and Arizona Revised Statutes (ARS) Title 45, Chapter 2, Article 10, as administered by the ADWR. In general, the procedures for each type of drill hole are provided in Table 11.

Table 11. Resolution Copper Mining Drill Hole Abandonment Procedures

Type	Purpose	Abandonment Timing	Abandonment Procedures
Exploration	Delineation of major structures and resource modeling	Holes would be abandoned when they have reached their reasonable limit of deflections based on current technology – Selected holes may be converted to hydrological monitoring wells (ADWQ) if in critical areas for pre-feasibility studies.	Drill hole abandonment would be conducted in accordance with Arizona Administrative Code (ACC) R12-15, Arizona Revised Statutes (ARS) Title 45, Chapter 2, Article 10, as administered by the Arizona Department of Water Resources (ADWR) In General, this procedure includes the following steps <ul style="list-style-type: none"> • After completion of each deflection, that portion of the hole would be filled with bentonite mud of sufficient density to prevent movement of groundwater between any aquifers. • After completion of all deflections, the cased trunk holes would be filled with bentonite mud and a cement grout plug would be placed extending from two feet below grade to a minimum of twenty feet below grade.
Deep Hydrogeology	Characterization of deep regional aquifer	Intended for long term monitoring of vertical K in the Whitetail conglomerate and flow/water quality in the deep aquifer	Wells completed to specifications would be maintained as long term monitoring locations. In the event of a lost hole or insufficient data from a well the selected well would be abandoned in accordance with the same procedures (ADWR) as the Resolution exploration holes.
Tunnel Characterization	Geotechnical and hydrological characterization of proposed tunnel alignment	After initial testing drill holes that are not necessary for pre-feasibility studies would be abandoned according to plan	Once selected for abandonment these holes would be abandoned in accordance with ADWR standards similar to the exploration holes with slight modifications due to the relatively shallow depth and absence of deflections. <ul style="list-style-type: none"> • A bentonite cement plug would be placed in the bottom forty feet of the hole • Bentonite grout would fill the entire hole with the exception of the top twenty feet. • A cement plug would be placed from two feet below grade to a minimum of twenty feet below grade.
Shallow Hydrology	Monitor of Apache Leap Tuff aquifer	Intended for long term monitoring / Dry wells will be abandoned according to plan	Wells completed to specifications will be maintained as long term monitoring locations. In the event of a lost hole or insufficient data from a well the selected well would be abandoned in accordance with the same procedures (ADWR) as the tunnel characterization holes.

5.4 APPURTENANCES

Pumps, signs, and any other items would be removed from Forest Service lands.

5.5 BOND

As part of this Plan, proposed drill sites and new access roads would be reclaimed. Reclamation activities as approved by the Forest Service would be bonded by Resolution Copper Mining, LLC.